Tune-Ripple-PS-Setup-2x28x07.doc

This procedure will describe how to use the pert page for the tune ripple p.s.

Sine Wave procedure

1) To get to the pet page go to the Pet Tree and go to FEC's>Instrumentation>AgilentFG_Quad
2) The pet page that comes up should look like FIGURE 1.
3) The very top line are the parameters for the external trigger. At the left of the first line it says **AgilentQuad.A1.Trig**. Figure 1 has the External trigger set up for a pulse of 720us wide and it starts on the 192 event. This event comes every 4 seconds. This event is line locked so the beginning of the 720us trigger will be line locked.
4) To use the external trigger you must set up the page as Figure 1 is with the **External** trigger. Find **TrigMode** and then select the **External** trigger option under **TrigMode**.
5) To send the waveform to the function generator with the external trigger option selected you must click on the **SendSetUp** button under **SendSetUp**.
6) Under the word **WaveShape** you can select **Sinewave** or **Squarewave**. Let's select **SineWave** for now as an example.
7) To select the high frequency component of the Sine Wave look for **Freq Hz** and then type in your frequency under these words. In Figure 1 50Hz is the frequency.
8) To select the period of the envelope of the Sine Wave look for **Period Seconds** and type in you period. In Figure 1 the period is 1 second.
9) Next you should select your Amps peak to peak you want. This gets entered under **Amplitude P-P Volts**. The **Amplitude P-P Volts** is equal to the Amplitude P-P Amps. In Figure 1 the **Amplitude P-P Volts** is 2 which means the Sine Wave will go up 1 amp and down 1 amp.
10) Next select how many of the envelopes you wish to appear after the external trigger. In Figure 1 only one envelope will appear after the trigger. The number of envelopes you want is set under **Tx# Pulses**. Here you see the number 1 is entered under **Tx# Pulses**
11) The plot you get under the pet page is a representation of the sine wave but the Y axis always goes from -1 to +1 no matter what you select for an amplitude. The X-Axis is based on the number of points in the table.
12) So to review: we have selected a Sine Wave, of 2 amps peak to peak, with a high frequency component of 50 Hz and a period of 1 second. The external trigger will start the sine wave and the event selected to start the trigger is line locked so the start of the 720us wide trigger will be line locked but the end of the 720us trigger is not line locked.

These are setup parameters for a sine wave of 50Hz high freq and 1 sec envelope. This uses the external trigger, the start of the external trigger is 720us wide, synched to the line and the trigger comes up every 4 seconds.
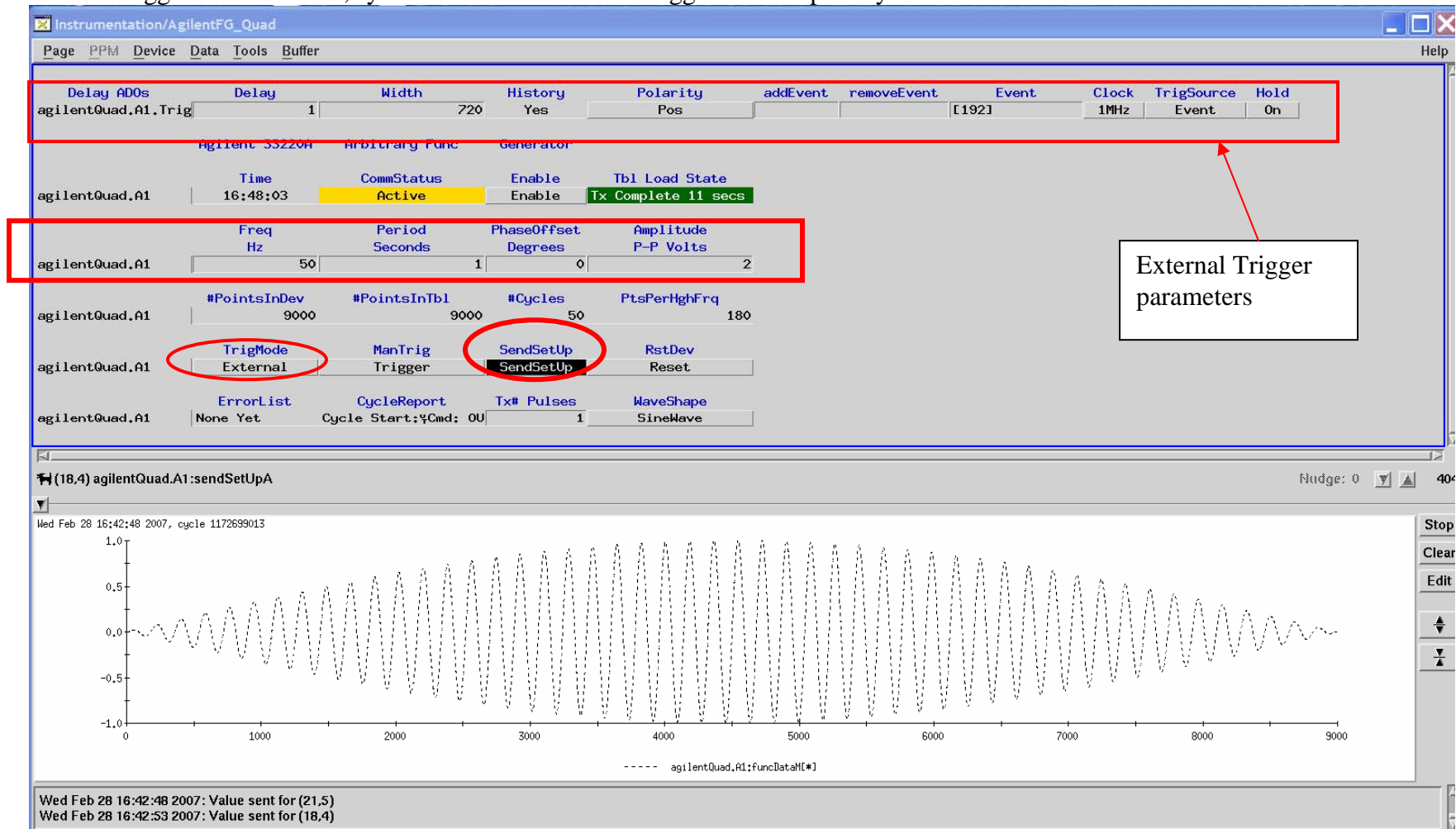

FIGURE 1

Square Wave procedure
1) The procedure to make a square wave is the same as making a sine wave. The only difference is that there is no envelope around the square wave. The period now tells you how long the high frequency square wave will last.
2) In Figure 2 we have selected Square Wave under **WaveShape.**
3) We still have 50Hz as the frequency of the square wave and the 50Hz square wave will be there for 1 second because the **Period** says 1 second.

This is the setup for the square wave with the same parameters except the waveshape now says square wave. There is no envelope here.
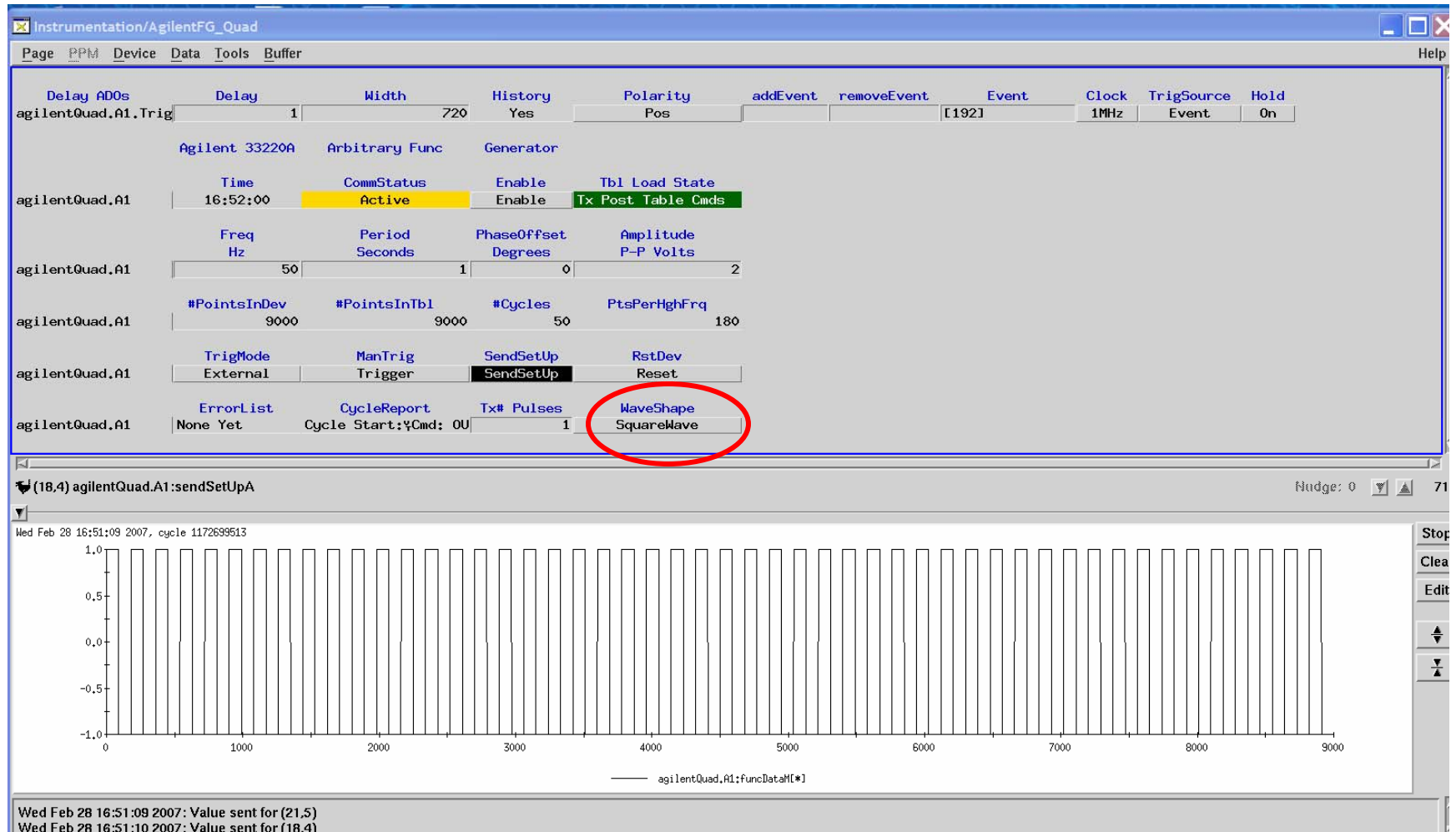

FIGURE 2

Manual Trigger Procedure
1) If you don't want to use the external trigger then you can go to the **TrigMode** selection box and select Manual.
2) Now to send the waveform you don't click on SendSetUp. In Manual trigger mode you must click on the **Trigger** button under the words **ManTrig**. You never click on SendSetUp when you are in manual trigger mode.
3) The procedure for setting up the waveform you want is the same as before. The only difference here from External tigger mode is how you send the waveform to the function generator.
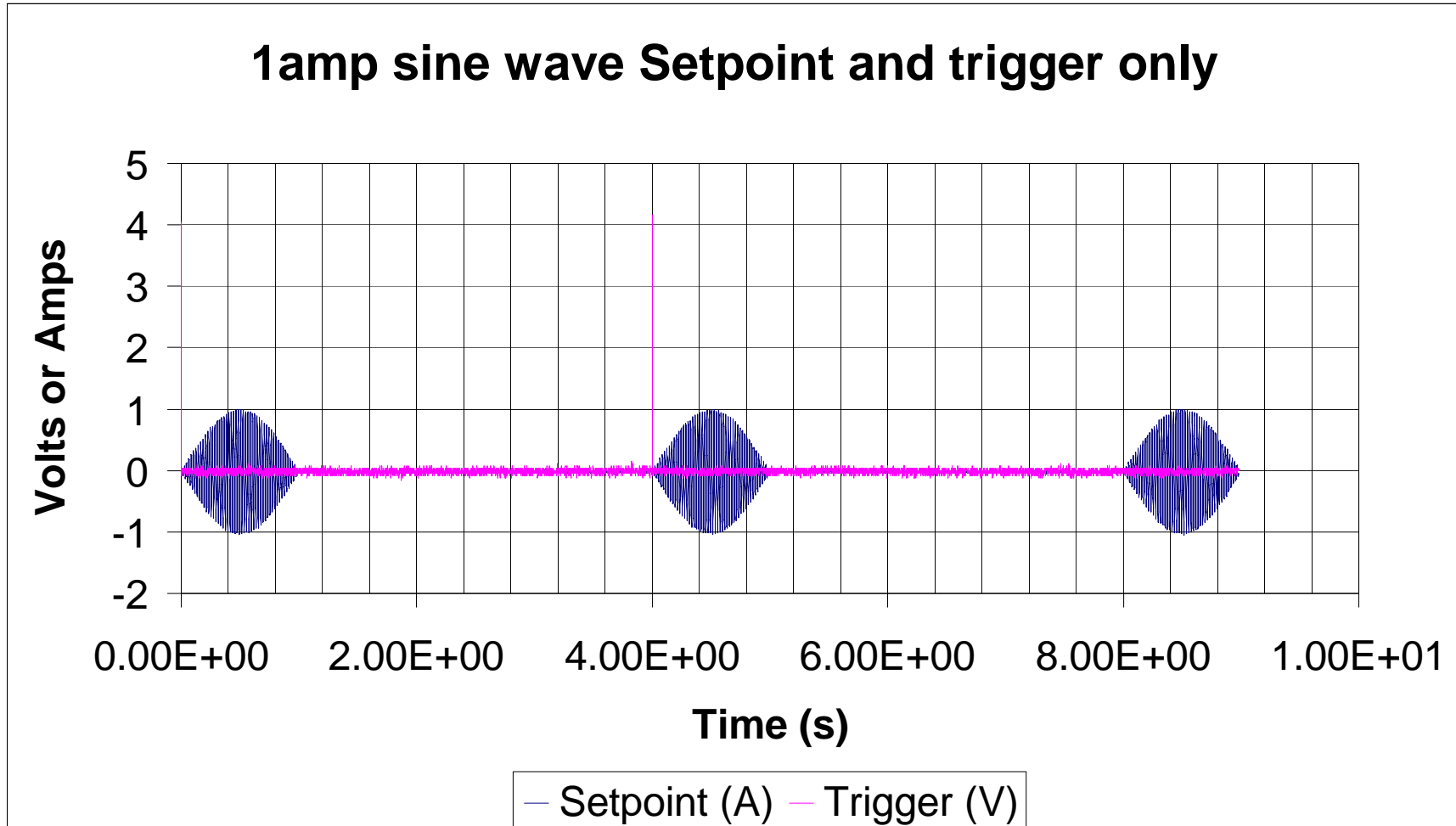
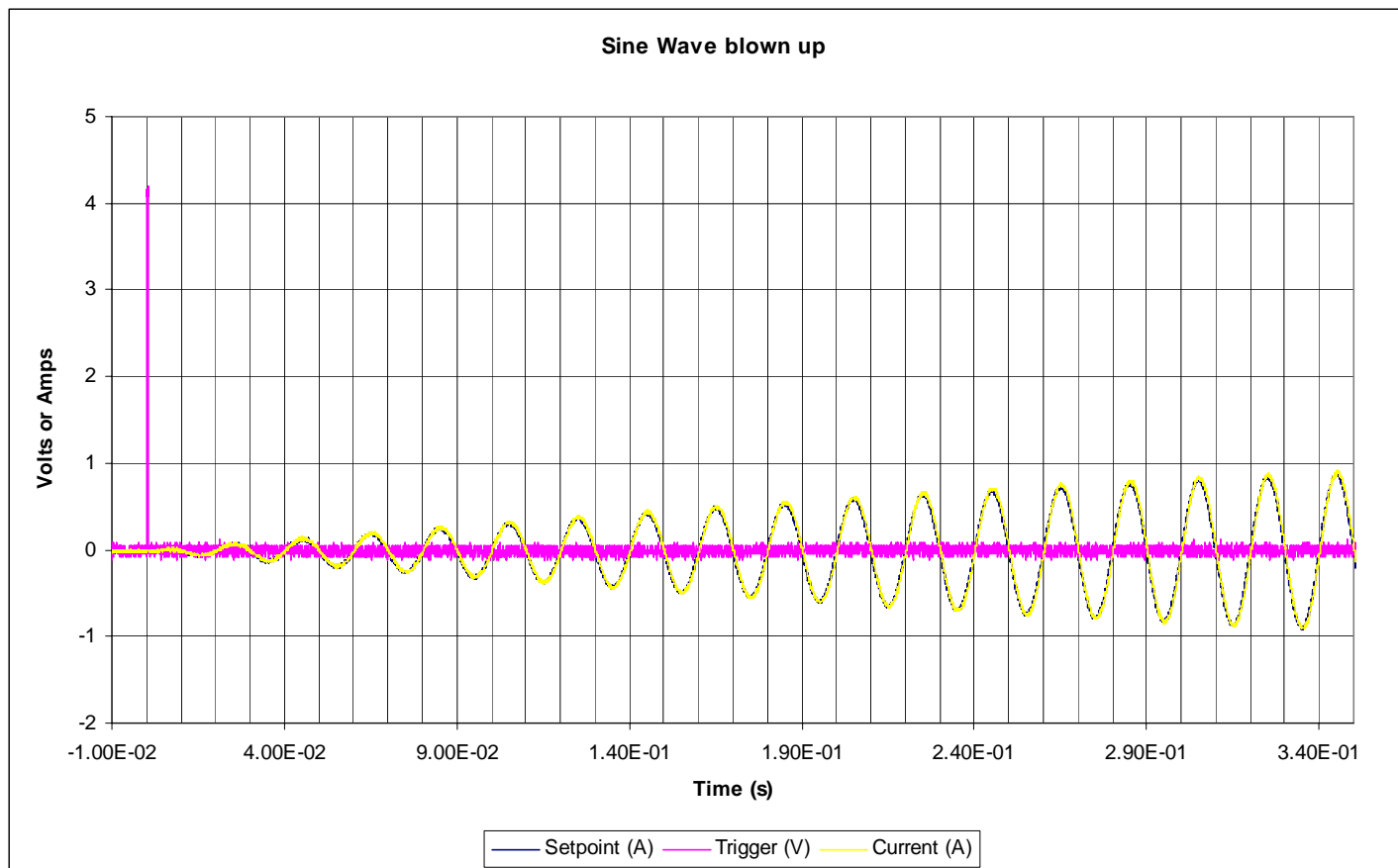**Instructions for turning on the Tune Ripple p.s.**
1) The tune Ripple p.s. is located in 1004A where the RF p.s.'s are.
2) It is a small 10Volt 10 Amp kepco p.s.
3) Enter 1004A where all of the RF p.s.'s are.
4) Towards the front of the room, closest to the tunnel you will find a blue rack that says PETE CAMERON'S P.S.
5) In the front of this rack at the top is a kepco p.s. There is a label on it that says PETE CAMERON'S P.S.
6) There is a function generator connected to the input of this p.s.
7) There is a scope connected to the functions generator output.
8) You will need to turn on the breaker on the front of the kepco p.s. It is Category 0+. This means you must wear safety glasses and gloves to throw this breaker on the kepco.
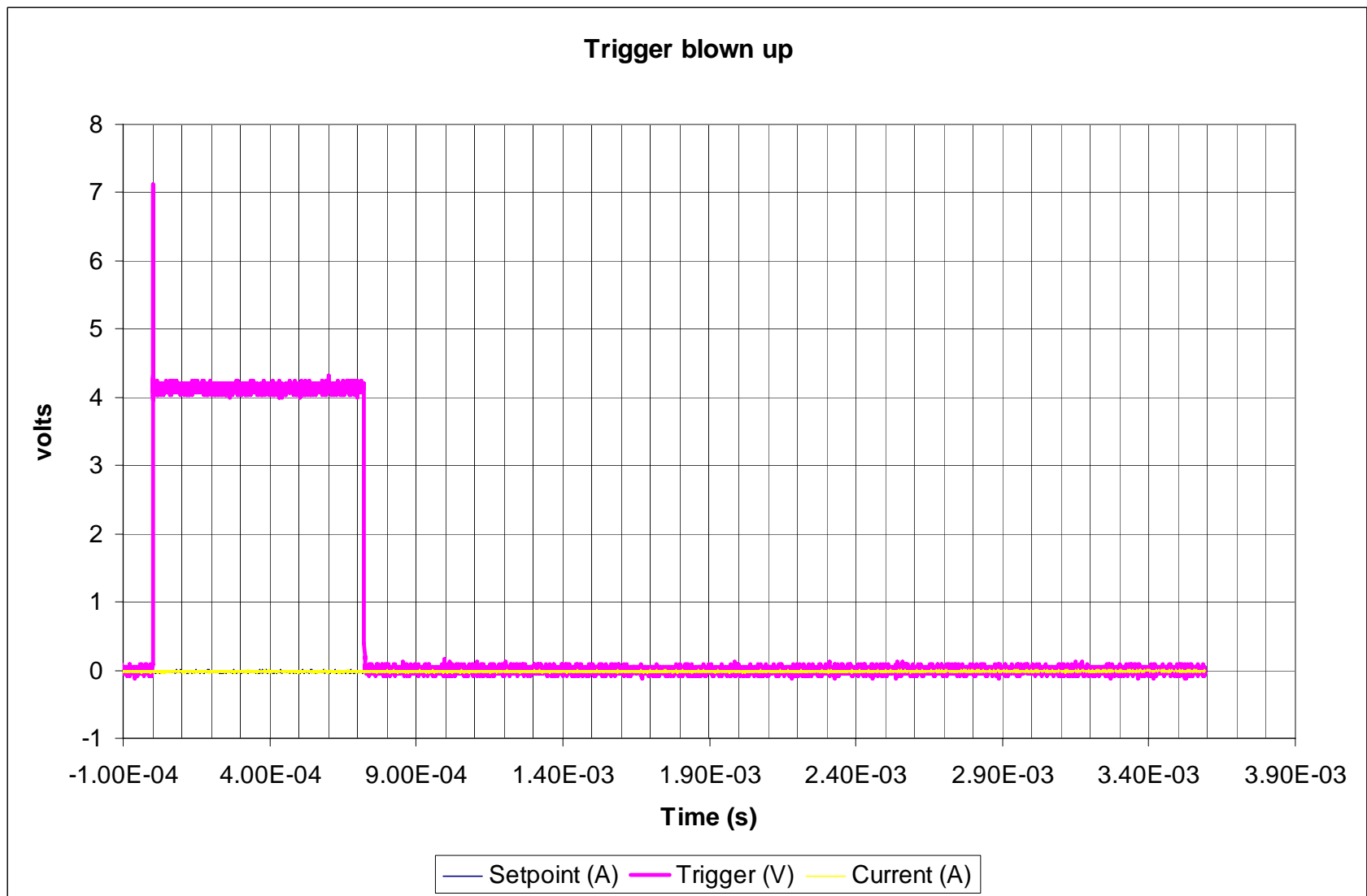
Using Oscilloscope Remotely
1) If you want to see the oscilloscope remotel you can go to internet explorer and type http://130.199.109.20/
2) This will show you a scope with 3 traces on it. The blue trace is the trigger. The yellow trace is the Sine wave or square wave and the purple trace is the current.

1amp sine wave Setpoint and trigger only

Sine Wave blown up

Trigger blown up

Some waveforms from the scope of the 50Hz square wave which is 1 second long

Square Wave

Square Wave

Square Wave

Setpoint (A) — Trigger (V) — Current (A)

Square Wave blown up without trigger